

ABSTRACT

A two-dimensional photonic crystal, wherein on a plane in which four adjoining unit lattices L are arranged so as to have one angle in common with the unit lattice L being a rectangle whose shorter side $X1$ has a length of $x1$ and whose longer side $Y1$ has a length of $y1$, columnar first dielectric regions each having a rectangular cross section whose shorter side $X2$ has a length of $x2$ and whose longer side $Y2$ has a length of $y2$ are arranged on shorter sides $X1$ and longer sides $Y1$ of each rectangular unit lattice L . In this two-dimensional photonic crystal, the first dielectric region is arranged so that the midpoint of the shorter side $X1$ and the midpoint of the longer side $Y1$ and the center of the rectangular cross section substantially coincide, and longer sides $Y2$ of each first dielectric region are substantially parallel to each other.